



Innovator In Spectroscopy Equipment

# RTL2419



## RADIOACTIVITY TLC SCANNER MODEL RTL2419

www.cfp.co.ir



CATALOG



MEDICAL



FREE DOWNLOAD

# RADIOACTIVITY TLC SCANNER

## MODEL RTL2419

### Features

- Extremely high counting rate
- One trace scan 25mm x 200mm
- Fast, automated and reliable scans
- High sensitivity for all radioisotopes
- Optional beta probe for PET applications
- Variable scan speeds from 0.1 - 60 (mm/sec)
- Very high counting rate and dead time correction
- Spectroscopic analysis of radiopharmaceutical purity
- Full detector and data acquisition control via application software
- Performs thin-layer Chromatography (TLC) using a high-resolution NaI detector
- Daily quality control of radiopharmaceuticals used in nuclear medicine procedures
- Durable and versatile
- Splash resistant design
- Wide temperature range
- Ready for field operation
- Easy system set-up and maintenance
- Continuous operation under severe environmental condition
- Robust and suitable for use in challenging conditions
- Easy to use system with maximum flexibility and automatic positioning system
- Integrated digital MCA with 4096 channel resolution and automatic decay correction and peak integration
- Supports all data extraction and reanalysis of stored data

## RADIO TLC SCANNER AND SPECTROSCOPY IN ONE!



## Description

Today radiochemical purity control is absolutely essential to ensure the accuracy of the radiopharmaceutical-based medical analysis, so the RTLC2419 from Control Farayand Pasargad (CFP) evaluates the radiochemical purity of specific radiopharmaceuticals used in nuclear medicine procedures. The RTLC2419 is well suited to the busy nuclear medicine department with many procedures to perform.

RTLC2419 comprises a NaI(Tl) detector in the standard package used in SPECT applications and comes with an optional beta detector that makes it suitable for PET applications.

The standard software provides a graphical user interface for TLC scan, gamma-ray spectroscopy, detector control, data acquisition, quality assurance (QA) and database management. The provided factory programmed protocols may be supplemented by user defined protocols. The protocols provide automatic control of the detector scan, the acquisition as well as graphical display and analysis. QA is assured by the quality control procedure and trending analysis of the QA data as a function of time. The database option supports the extraction and re-analysis of all stored data.

Various procedures needed for radio chromatography are implemented in the software of RTLC2419. The chromatography procedure starts with definition of "Drop Point" and "Front End" where the user can define the starting and end of chromatography. User can also define the "Time" for the whole test and the "Repeat" number of test. Together with these information, the user provides various information that will be printed in the final report and will be used to identify the person who perform the test and its exact date and time. After this initialization setting, the chromatography test will be started and in the "Time" parameter defined by the user, the test will end. By finishing the scan, various features for the device will be activated. The user can define a specific energy range and the device will immediately visualize the chromatogram for the corresponding range. On the other hand, the user can also define an interval along the test length and software will immediately generate the spectrum corresponding to that interval. Various smoothing operations for both chromatogram and spectrum are applicable in the software.

For chromatographic analysis, the user can easily define "Radiopharmaceutical", "impurity" and "Background" regions and then software will perform the analysis and show the result in the table placed on the upper right corner of the software.

The report generated by the user present a summary result of the test where analysis result table, whole spectrum and

chromatogram are displayed. Also the color of final report can also be customized based on the user preferences.

Altogether RTLC2419 is a total solution for radio chromatography tests which provide the user with various analysis setting parameters, data visualization procedures and reports.

## Specifications

<b>Input(s)</b>
Power
48V (1.25A) AC to DC adaptor
LEMO PC interface
DC +5V LEMO 5 pin (200mA) for PC communication
<b>Output(s)</b>
No output signal
<b>Control(s)</b>
knob
This knob provides the user with manual control over the device slider.
Power Push button
Push to turn device ON and hold for 3 seconds to turn device OFF (long press)
While device ON push key to change mode (short press)
LEMO port
Setting configuration via LEMO 5 pin (A), USB (B) cable (set and read all data)
<b>Indicator(s)</b>
No indicator
<b>Performance</b>
Speed
0.1 –60mm/sec
Travel length
200mm
Strip size
25mm x 200mm
Collimators
Type1: For NaI(Tl) Detector (X and Gamma)
Type2: For Plastic Detector (Beta)
<b>Detector</b>
NaI(Tl)
1" x 1"
PVT( optional)
0.25mm
<b>Data Acquisition and Analysis</b>
Processor
FPGA technology with Arm9, 32 bit 200MHz
OS
Built in Windows 7 or higher versions
Software

RTLC2419 (SOFTWARE)
<b>Measurement/Spectrum</b>
High Voltage
0 - 1500V (DAC 12bit) 0.2mA
Energy channel (selective by admin)
From 0 to 1024keV
From 0 to 2048keV
From 0 to 3072keV
From 0 to 4096keV
Energy calibration
Non-linear empirical function or linear Calibration (polynomial fit)
ROI selection
Radiopharmaceuticals (arbitrary number of Rol)
Impurity (arbitrary number of Rol)
Background (one Rol)
<b>ADC</b>
Channels
12bit in 4096CH @120Mhz FRQ
Conversion time
200nsec with 8.3nsec time interval
<b>Digital Signal Processing</b>
12-bit and 120MHz ADC
Charge sensitive preamplifier gain:10 – 150mV/pC (selectable)
Amplifier coarse gain: (x1 to 150x) in 15 step
Amplifier fine gain: (0 - 2x) in 65536 step
Integration time filter for the energy calculation with software adjustable rise time in the range 0 to 0.546ms @80Mhz in 0-65536 step
Trigger threshold software adjustment (0 to 100% scale) in 1024 step
Software fine tuning of the Pole-Zero cancellation
Software gain stabilization
Pile-up rejection and live time correction
Baseline restorer with programmable averaging

## Application

- Nuclear medicine
- Routine quality control of radiopharmaceuticals containing  $^{68}\text{Ga}$ ,  $^{177}\text{Lu}$ ,  $^{90}\text{Y}$ ,  $^{18}\text{F}$ ,  $^{99\text{m}}\text{Tc}$ ,  $^{123}\text{I}$  and other
- Radiochemical purity measurements
- Online inspection
- PET and SPECT quality control
- Quantitative and qualitative analysis of radioactive compounds
- Development and completion of the chromatographic process
- Radio scanning and documentation
- Pharmaceutical metabolite analysis
- Radiotracer toxicology studies
- TLC of radiopharmaceuticals labeled with gamma, high energy beta and positron emitters for R&D





Software and user interface

PC software

RTL2419 (SOFTWARE): The system includes RTL2419 software for instrument control and data analysis. Quantitation of peaks is automatically performed and a report showing the method used, chromatogram and different radioactive information is generated. This software provides an easy-to-use interface for RTL2419 operation and radio-chromatographic analysis, including instrument control, method definition and storage, data acquisition, quantitative analysis and reporting functions.

Figure 1: Experimental setup window where the user can set various test parameters

Figure 2: Data acquisition window displayed when radio chromatography is being performed.

Figure 3: Typical software report where the user can customize the color (color, gray or monochromatic)

Input /Output (Using RTL2419 software)

USB

Data Output formats

CSV, TXT, XLS, DOC

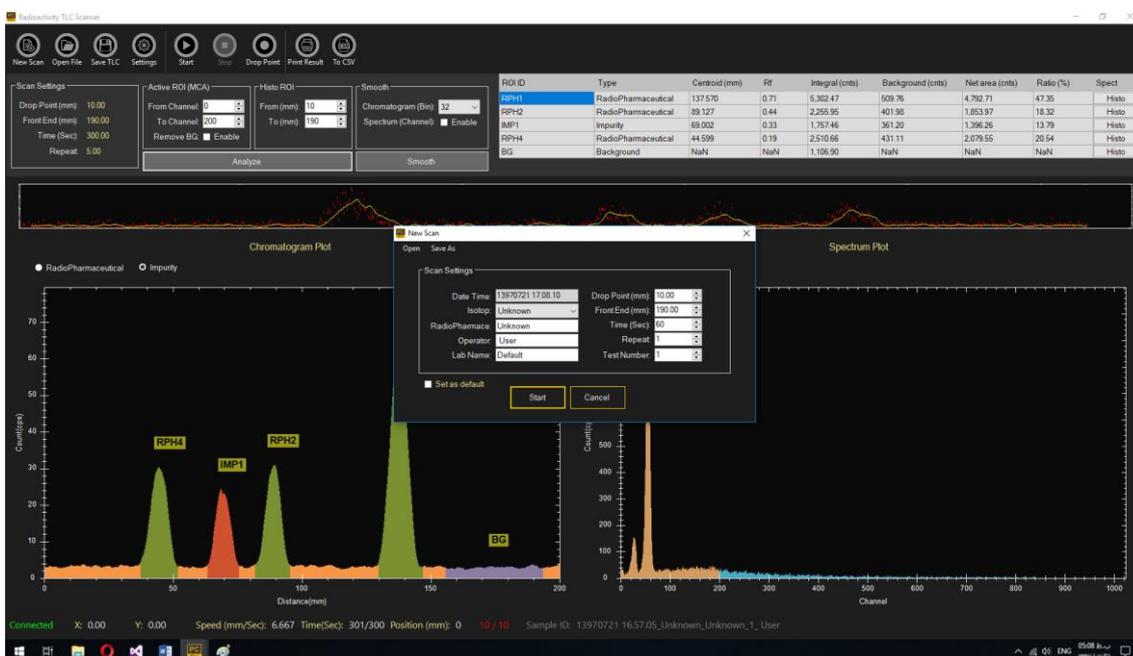


Figure 1: Experiment setup window

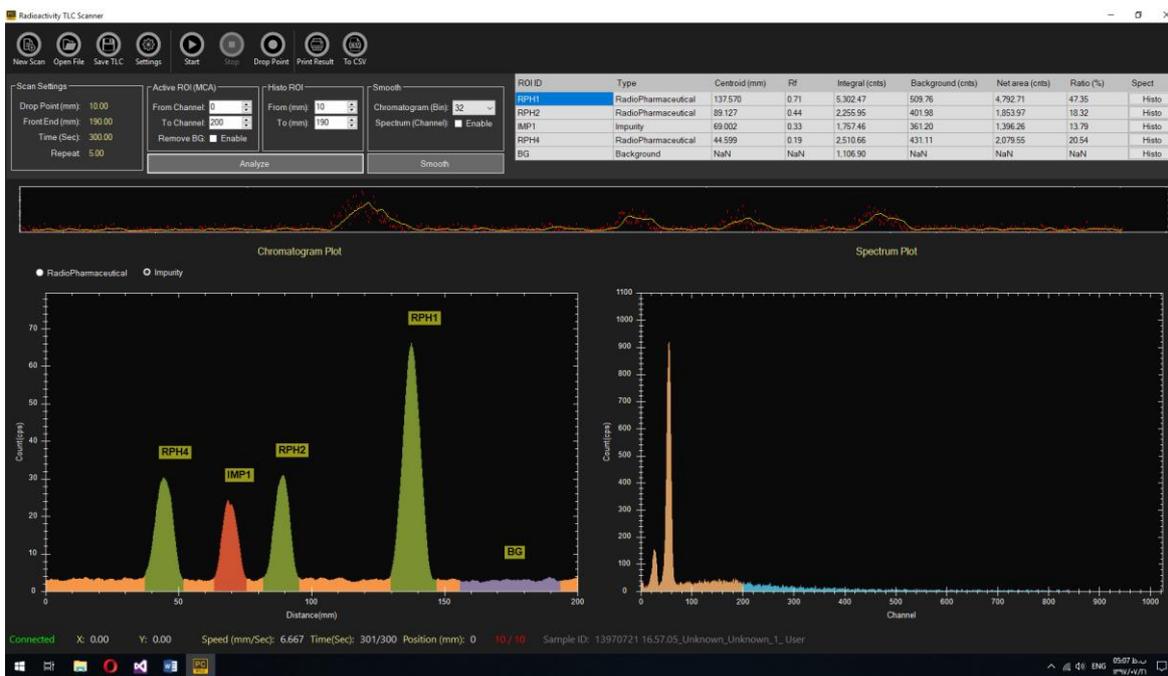


Figure 2: Data acquisition window

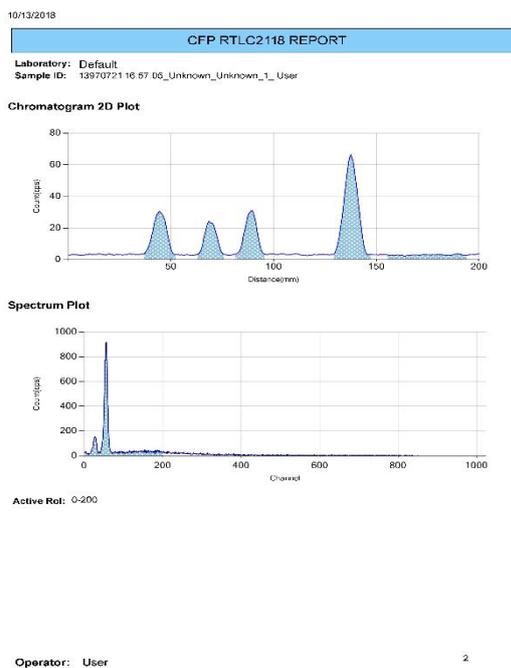
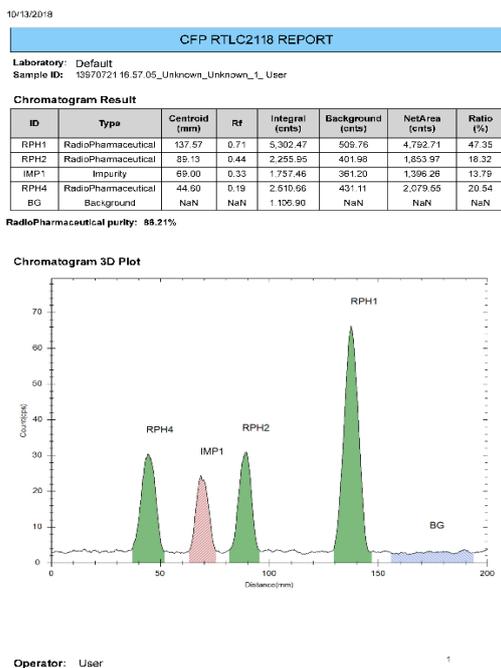


Figure 3: Typical software report

## Ordering info

### RTLC2419 standard package includes

Part #	Image	Description
RTLC2419 main		Main body of device (detection system, linear stage, integrated display)
ACCE2419001		User guide CD (1 Pack)
ACCE2419003*		Guaranty (one year)
ACCE2419011		5pin LEMO to 5pin LEMO connector for main to detector connection
ACCE2419012		LEMO cable to USB for PC connection
ACCE2419013		DC Power adaptor 48V, 1.25A

\* We fully support our products. We guarantee your satisfaction in the quality of our instruments by providing a complete one-year warranty covering any defect of workmanship, material, and/or design. If our products do not perform, we will provide complete repair and/or replacement. For guaranty conditions, please refer to device manual (RTLC2419 - Manual).

### Optional accessories and services

Part #	Image	Description
ACCE2419004		Installation
ACCE2419005		Training
ACCE2419006**		Re-calibration (interval) services. 1year factory maintenance suggested, not required
ACCE2419007		Hard case with foam insert
ACCE2419014		Beta probe (PVT, 0.25mm)

\*\* = The proper maintenance & calibration of your instruments is critical to ensure proper performance & accuracy. for Re-calibration (interval) services, please call with CFP company (021- 46045383).



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